

R&D Scoping and Framing Workshop
R&D Roadmap: Managing Western Water as Climate Changes
February 20 and 21, 2008

Responsibilities, Challenges, and Needs
Perspectives of Reclamation Water Operations Managers

Note: The information presented herein is intended solely to facilitate a working level dialogue between the federal scientific community, and Reclamation water and environmental resource managers, on climate change research needs in support of Western water management. As such, *“this information has not been formally disseminated by the Bureau of Reclamation and should not be construed to represent any agency determination or policy”*.⁽¹⁾

Generally describe your region’s water operations and planning responsibilities (*this is meant to be a high level summary of your world*):

- Realtime and short-term operation of Upper Colorado Basin Reclamation reservoirs including Fontenelle, Flaming Gorge, Taylor Park, Aspinall Units, Navajo, and Glen Canyon. Operations strive to satisfy project purpose, including flood control, river regulation, beneficial consumptive uses, power production, water quality control, recreation, enhancement of fish and wildlife, and other environmental factors.
- Long-term planning is generally required for Environmental Assessment (EA) and Impact Statements (EIS) considering a single Upper Basin reservoir or a system of reservoirs through the basin depending on the report’s scope.

Describe the primary types of decisions that your region makes associated with water and operations and planning that might be affected by climate change.

- Climate Change is generally associated with longer-term decisions such as the reservoir and river basin modeling typically required in EA and EIS analysis. These analyses simulate beyond 10 years.
- Climate variability has the potential to impact mid-term and real-time operations. For example, with the Annual Operating Plan (AOP) operations for the next year are modeled based on three forecast scenarios (max, most, and minimum probable) The range of these forecasts can be directly affected by climate variability. At time scales less than a year peak runoff may shift due to climate change possibly impacting reservoir rule curves of fill and release periods developed under different historic climate variability.

What are the primary scientific or non-scientific factors that typically govern these decisions?

- At the long and mid-term time scale the primary factor typically governing the decisions is hydrologic variability and average runoff volume.
- At the near-term time scale a primary factor governing decisions is runoff forecasts.
- Meet project purpose as hydraulically possible.
- “Law of the River” must be factored in; i.e., meeting Colorado River Basin compact.

Who are the primary stakeholders affected by these decisions and summarize their primary concerns?

- Entities that receive Reclamation project waters – primary concerns is inadequate supply
- Endangered species requirements – not meeting needs
- Power supply agencies- primary concern is decreased power generation due to less water overall and more constraints on operations

^{1/} Stated in accordance with Information Quality Act (Public Law 106-554), Final Information Quality Bulletin for Peer Review (Office of Management and Budget, December 16, 2004).

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In general, list the top three wishes that you would like for scientific community to provide you, in support of your western water management responsibilities that are related to understanding and utilizing climate change information.

1. Five year monthly probabilistic forecast conditioned on climate outlook
2. Risk of occurrence associated with climate emissions and downscaled GCM output
3. Climate variability and change impacts on seasonal flows and timing and their associated probabilities.

Are there current or emerging “*project-specific applications*” in your region where answers to these three wishes may be beneficial to you in the near-term?

- a. Long-Term Experimental Plan current EIS presently finalizing its scope.